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Atempo, Inc.

Booting Live Backup Disaster Recovery over the Network

*Using Windows Deployment
Services to recover a Live Backup
Client system over the network*

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Table of Contents

Preface: Live Backup Network Disaster Recovery	1
Definitions.....	2
Requirements	2
Creating the Live Backup disaster recovery images.....	3
<i>To create a universal boot image</i>	<i>3</i>
<i>To create the system image</i>	<i>4</i>
Adding the boot image to WDS	5
<i>To add the Live Backup boot image.....</i>	<i>5</i>
Launching the Network Disaster Recovery.....	6

Preface: Live Backup Network Disaster Recovery

This guide provides instructions for using Windows Deployment Services to boot a Live Backup 3.3 Client computer into the Live Backup Disaster Recovery Console, and recover from a system disaster over the network. Windows Deployment Services is the next version of Window Remote Installation Services.

To perform the procedures in this guide, the administrator must be familiar with Windows Deployment Services as well as the Pre-boot eXecution Environment. For more information, see *Windows Deployment Services Update Step-by-Step Guide for Windows Server 2003* on the Microsoft Web site at <http://technet2.microsoft.com/WindowsVista/en/library/9e197135-6711-4c20-bfad-fc80fc2151301033.mspx?mfr=true>.

In addition to these technologies, the administrator should familiarize him/herself with the Client recovery procedures described in the *Live Backup Administrator's Companion Guide* as well as the *Live Backup Client User Guide*. Both of these guides are available on the Live Backup product CD as well as the Atempo Web site at <http://www.atempo.com/support/downloads.asp>.

Important: This guide is for Live Backup 3.3 and later.

In this guide, you will learn about the following:

- Definitions
- Requirements
- Creating the Disaster Recovery images
- Adding the boot image to the WDS Server
- Launching the Network Disaster Recovery

Definitions

This document uses the following terms with which you should be familiar:

Universal Boot image: A single boot image from which you can burn bootable CDs or DVDs or add to a WDS Server to launch Disaster Recovery on any Live Backup Client computer. This boot image is based on Windows PE (Windows Preinstallation Environment), which provides a light version of Windows that can be used to load the operating system for recovery. You create a universal boot image using the Live Backup Disaster Recovery Boot Media Wizard.

Live Backup Disaster Recovery: The procedure for restoring a client computer protected by Live Backup from bare-metal to a specific saved point in time.

Net-PC/PC98 compatible: The annual guide for hardware developers co-authored by Microsoft with Intel, including contributions from Compaq and other industry hardware manufacturers. PC98 is intended to provide standards for hardware development that advance the PC platform and enable Microsoft to include advanced features, like PXE, in the Windows platform.

Network Disaster Recovery: A Live Backup Disaster Recovery performed by accessing the boot and/or the system image from a remote computer.

Pre-boot eXecution Environment (PXE): A bootstrap technology that enables a computer to boot from a server on a network prior to booting the operating system from the local hard drive. This technology enables software to be loaded to the computer from a server over a network. It is required for Windows Deployment Services and is available for example, on Net-PC/PC98 compatible computers.

Windows Deployment Services (WDS): The updated version of Remote Installation Services (RIS). A Windows component that you can install with Windows Server 2003 or add at any time after the operating system is installed. WDS is an automated installation technology that you can use to create installation images of operating systems or of complete computer configurations, including desktop settings and applications. These installation images can then be made available to users at client computers.

System image: A complete, exact copy of a client's hard drive(s), including all files and boot sector information. An image may be generated from any available system checkpoint. Recovery images are required for performing a full local or network share disaster recovery on a given client. You create a system image using the Live Backup System Image Wizard. System images are not required for a network service disaster recovery, during which the recovery image is created on the fly and streamed over the network.

Requirements

- Live Backup 3.3 or later. Live Backup 3.0 supports this functionality using Remote Installation Services. For more information, see *Live Backup 3.0 Disaster Recovery over the Network.pdf*.
- If you choose to perform Disaster Recovery from an image saved on a network share, then you need a system image for the Live Backup client account to recover.

If you want to restore data directly from the client account, then no system image is required. However, the user performing the Disaster Recovery will need sufficient Live Backup rights to access the data.

- A universal boot image created by Live Backup.
- PXE-enabled Live Backup Client computer, for example, any computer that is Net-PC/PC98 compliant

Creating the Live Backup disaster recovery images

If you plan to recover from a network share, you will need to create two images:

- Universal boot image
- System image

If you plan to recover the data directly from the client account on the Live Backup Server using a network service, then you need only the Universal boot image.

You can find full instructions for creating these images in the *Live Backup Administrator's Companion Guide* as well as the *Help for Live Backup Server*.

Abbreviated instructions for creating the images are below.

To create a universal boot image

1. On the Live Backup Console computer, click **Start**, point to **Programs**, and then **Atempo Live Backup Console**. Click **Disaster Recovery Boot Media Wizard**.
2. On the Welcome page of the Disaster Recovery Boot Media Wizard, click **Next**.
3. On the Include Additional Drivers page, specify the name of the Live Backup Server computer where the wizard will search for network and other drivers to add to the boot image. Click **Next**.
4. On the Add Custom Tools page, specify the location of any customer tools you want available to run on the client computer once it boots. Click **Next**.
5. On the Comments page, type any instructions required for the user to complete the disaster recovery successfully. For example, specify what tools should be run and how, and/or specify the location of the system image to be restored.
6. On the Image Type and Destination page, choose the type of boot image you want to create and a location for the files.

- Select the **Set of files in subfolder for copying onto the bootable media** option.
- Select a location that is accessible to your RIS server.
- Click **Next**.

7. On the Summary page, click **Finish**.

To create the system image

Create a system image only if you want to restore from a network share.

1. On the Live Backup Console computer, run Live Backup Console.
2. Expand **Live Backup Servers**, servername, and then expand **Clients**.
3. Right-click the client for which you want to create a system image, point to **All Tasks**, and then click **System Image Wizard**.
4. On the Welcome page, click **Next**.
5. On the Select a System Checkpoint page, click the checkpoint that represents the version that you want to restore. It is recommended that you choose a checkpoint with a green icon beside it. Click **Next**.
6. On the Choose Image Media Type page, select **Network Share**, and then click **Next**.
7. On the Select Target Directories page, choose a network share location accessible to the client computer you are recovering. Choose whether you want to encrypt the image files, and then click **Next**.
8. On the Comments page, type any information you want to include with the recovery image, and then click **Next**.
9. On the Summary page, click **Finish**.
10. Follow any prompts that appear.

Adding the boot image to WDS

After you have created the necessary disaster recovery boot and system images, you must add the boot image to a fully configured Windows Deployment Services server. Windows Deployment Services (WDS) is a Windows component that enables you to create installation images of operating systems or other software. Its primary intention is to enable the administrator to deploy the Windows Vista operating system or other system software to multiple client computers over the network, without having to visit each workstation.

Live Backup takes advantage of this technology to deliver its universal boot image for disaster recovery to the client computer, without the need for physical boot media to launch the process.

To do so, you will need to add the Live Backup boot image to an existing WDS installation.

You can learn more about installing and configuring WDS at <http://technet2.microsoft.com/WindowsVista/en/library/9e197135-6711-4c20-bfad-fc80fc2151301033.msp?mfr=true>.

To add the Live Backup boot image

1. Run the Windows Deployment Services MMC snap-in.
2. Expand the server list, and locate the server for which you want to add the boot image.
3. Right-click the **Boot Image** node, and then click **Add Boot Image**.
4. Browse to select the Live Backup boot image file boot.wim. It is located in the BOOTIMAGE\source folder of the location you selected during the Live Backup Disaster Recovery Boot Media Wizard. See step 6 of To create a universal boot image on page 3.
5. On the Image File page, click **Next**.
6. On the Image Metadata page, you can edit the name and description of the image, if you want. Click **Next**.
7. On the Summary page, click **Next**.
8. Click **Finish**.

Launching the Network Disaster Recovery

To use Windows Deployment Services to deliver the Live Backup Disaster Recovery boot image to the client computer, the computer must be PXE compatible. Most computers manufactured after 2001 are PXE compatible.

The first step is to PXE boot the client computer. The exact procedure to PXE boot depends on the computer BIOS type and version, so check the computer's documentation. Some examples are provided below:

1. If the BIOS prompts to press some key (e.g. F12) to launch the PXE boot, press it.
2. If the BIOS allows selection of a boot device from a popup menu (such as "BBS Popup"), then activate this menu by pressing the corresponding key (e.g. F8). Then when the menu appears, select the PXE device. Note that the PXE device may be named "Intel Boot Agent," "IBA 2.0 Slot XXX," etc, usually containing text such as PXE, IBA, or Intel Boot Agent.
3. If neither of the above methods work, then make sure the PXE boot is enabled in the BIOS. Check the Boot screen of the BIOS Setup utility for an option named "PXE Boot to LAN" (or similar). Enable this option, save the BIOS settings, and then retry the method above.
4. Finally, if nothing else works, select the PXE device as the first boot device from the Boot Device Priority or similar option.

After initiating PXE boot do the following

1. Once the PXE boot code detects an RIS Server, it loads the network bootstrap program, and then prompts you to press F12 to initiate the network service boot. When prompted, press F12. The network service boot begins.
2. The Windows Boot Manager appears containing a list of available installation images. Choose **Live Backup Disaster Recovery**, and then press **Enter**.
3. On the Installation Information screen, press **Enter** again. The Live Backup boot image loads, and then Disaster Recovery Console appears.
4. You can now choose to recovery using the Network Share or the Network Service options. For details on how to continue, see the *Live Backup Client User Guide* or the *Help for Live Backup Client*.